Blind Bidding in the AWS Auction
Pros and Cons

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Overview

- ***Concealing identities of bidders on individual licenses after each round can, in theory, limit ability of bidders to coordinate bids.***
- ***Not at all clear, and analysis appears limited, as to whether the benefits of blind bidding outweigh the costs.***
- ***Concealing identities of those participating in auction, and their level of participation, has no apparent benefits, and only imposes costs.***
- ***Uncertainty in license valuation for AWS spectrum is high as handset vendors are not willing to make commitments yet, at least to mid-sized and smaller carriers.***
- ***Experience, especially in EU, indicates that bidders will take other measures to avoid uncertainty and reduce risk, such as forming consortia.***
  - Financial entities will be more reluctant to invest in entities when there is uncertainty about level of competition in markets post-auction.
  - Blind bidding increases uncertainty, which
    - Increases financing costs for all bidders, ex ante, and
    - Reduces expected license values for bidders.
  - Blind bidding can reduce participation, which would reduce auction revenues.

Current and Proposed Information Disclosure Provisions

Current disclosure provisions:

- ***Before the auction***
  - Bidder short forms, 175s, providing information about equity owners, designated entity status, and affiliations
  - Initial eligibility of all bidders
  - Lists of licenses each bidder is seeking (often *All)*
- ***During the auction***
  - All bids and bid amounts. This includes number of bids on each license, jump bids, switches, bidders raising own high bids, eligibility reduction, exposure

Proposed disclosures:

- ***Before the auction***
  - Total eligibility of all bidders?
- ***During the auction***
  - Number of bids on each license in each round
  - Gross, but not net, high bid on each license in each round and minimum required bids

AWS Business Case and Winner's Curse

- ***Several have argued that the 2G/3G business is now well understood, and so there should be relatively little uncertainty about AWS license values.***
- ***While potential demand for AWS services is much better understood now than PCS services were in mid-90's there may be greater uncertainty about costs now than there was even then.***
  - CBO estimated WCS auction (#14) would raise approximately $2 billion, and not the $13.6 million it did raise.
  - EU 3G licenses were auctioned several years before operators were able to obtain equipment. Even now, most new adds are still GSM.
- ***Handset availability is very uncertain for AWS.***

Impact of Handset Availability on AWS Value Proposition

- *QUALCOMM has indicated that it plans to develop chipsets, but commitment is awaiting outcome of auction.*
- *In addition, no handset vendors have committed to providing anything for AWS frequency.*
- *There are now hundreds of GSM and CDMA handsets available, and the unsubsidized cost of handsets starts at less than $100.*
- *If VZW does not bid, Leap can anticipate handset costs could be $200 or more, if available. The impact of valuation can be $10 or more per month per subscriber, which can be the entire margin*
- *If only CDMA equipment is available in the AWS bands, the impact on regional GSM providers will be similar.*

End of 2004 Leap monthly ARPU/sub	*$37.29*
End of 2004 monthly CCU	*$18.74*
End of 2004 monthly per sub cost of churn	*$6.52*
End of 2004 contribution per sub	*$12.03*
Incremental cost of handsets	*$8.53*

Blind Bidding and Risk of Excessive Entry

- ***AWS/PCS requires significant fixed costs to provide market coverage.***
- ***Population density can limit number of competitors that market can support.***
- ***Blind bidding creates uncertainty.***
  - Expected payoff for a single new entrant, or even two new entrants, can be positive, but expected payoff with two or three new entrants is negative.
  - Blind bidders, and their financial backers, will not be able to ascertain whether they will be able earn a positive return ex ante.
  - Creates incentive for pre-merger coalitions.
- ***Blind bidding can discourage strategic bidders, other than the four nationwide operators.***
- ***While auction rules should not protect competitors from miscalculations, the rules should also not exacerbate already high risks.***

Benefits of Coordination

- *Knowledge of identities of rival bidders and bids is a critical factor affecting risk of entering new markets.*
- *E.g., (1) knowledge of surrounding competitors is important for data roaming.*
- *E.g., (2) interference across adjacent bands can be a concern for WCDMA operators adjacent to CDMA 2000 ones.*
- *Financing of entrants is particularly vulnerable to uncertainty about post-auction competition in regional markets and opaque process, as compared to financing of national operators.*

German 3G Auction Results

Blocks	Bidder Name	DM	USD
1	Viag Interkom:	DM8.3104 billion	$3.86 billion
2	Mobilcom Multimedia*:	DM8.17 billion	$3.79 billion
3	Mannesmann Mobilfunk:	DM8.33 billion	$3.87 billion
4	Group 3G*:	DM8.3046 billion	$3.85 billion
5	Mobilcom Multimedia*:	DM8.2 billion	$3.81 billion
6	Viag Interkom:	DM8.2066 billion	$3.81 billion
7	T-Mobil:	DM8.3043 billion	$3.85 billion
8	E-Plus Hutchison:	DM8.2743 billion	$3.84 billion
9	T-Mobil:	DM8.2779 billion	$3.84 billion
10	E-Plus Hutchison:	DM8.1439 billion	$3.78 billion
11	Mannesmann Mobilfunk:	DM8.1438 billion	$3.78 billion
12	Group 3G*:	DM8.1414 billion	$3.78 billion

* Abandoned licenses post auction

Other Views

- ***Virtually all operators and their financial backers favor open bidding.***
  - Large operators, including T-Mobile, Sprint and Cingular favor open bidding and not making any changes to the SMR rules.
  - All small operators favor transparency.
  - Financial community, e.g. Columbia Capital, MC Venture Partners, Madison Dearborn, TA Associates, favor open bidding, as reinforced by Reuters.
- ***The one exception is Verizon Wireless.***
  - Verizon Wireless appears interested in nationwide licenses.
  - Verizon Wireless, as one of the two largest CMRS operators, and the largest if one includes Vodafone's footprint, has greater ability to secure vendor commitments from handset vendors, and better information about costs.
  - Verizon Wireless will want to keep other CDMA operators from learning anything based on its bidding.

Blind Bidding and Point Parking

- *Blind bidding will discourage parking points – which will not only reduce auction revenues, but paradoxically can reduce efficiency of the auction.*
- *In previous auctions, national carriers bidding to fill holes, especially Verizon, have had a statistically significant effect on prices.*
- *In Auction 35, each of three 10 MHz licenses in NYC went for over $2B.*
- *Point parking occurs even in auctions with low initial eligibility, even < 2.0.*

Auction 58 – Impact of Holes

Price per Mhz (per population)	*Coef.*	*Std. Err*	*t*
Population in 1000s	0.00053	0.000045	11.82
Population in 1000s Squared	0.00000	3.33E-09	-7.51
Round of Highest Bid	0.00596	0.001415	4.21
Verizon - MHz below Target (45Mhz)	0.01009	0.003066	3.29
Cingular+ATT - MHz below Target (45Mhz)	0.00809	0.002903	2.79
Sprint - MHz below Target (30Mhz)	0.00243	0.003946	0.62
T-Mobile - MHz below Target (45Mhz)	0.00622	0.003252	1.91
Intercept	-0.52551	0.137580	-3.82

$F(7,199) = 25.22$
$R^2 = .4701$
Adj. $R^2 = .4515$

Operator	*Ave. MHz below target*	*Ave. effect*
VZW	*18.59903*	*$0.19*
Cingular	*7.07730*	*$0.06*
Sprint	*6.64251*	*$0.02*
T-Mobile	*26.65459*	*$0.17*

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Auction 35 (Markets over 1 Million People) – Impact of Holes

Price per Mhz (per population)	*Coef.*	*Std. Err*	*t*
Population in 1000s	0.001076	0.000253	4.24
Population in 1000s Squared	-6.43E-08	1.62E-08	-3.97
Round of Highest Bid	0.043170	0.012842	3.36
Verizon - MHz below Target (45MHz)	0.071624	0.029255	2.45
Cingular - MHz below Target (45MHz)	0.055026	0.018689	2.94
Sprint - MHz below Target (30MHz)	0.014808	0.026935	0.55
ATT - MHz below Target (45 MHz)	0.005260	0.023862	0.22
Voice - MHz below Target (45 MHz)	0.055216	0.021471	2.57
AllTel - MHz below Target (30 MHz)	-0.008638	0.025084	-0.34
New York City License	8.833318	1.920941	4.6
Intercept	-3.599916	2.246186	-1.6

$F(10,93) = 9.70$

$R^2 = .5104$

Adj. $R^2 = .4578$

Operator	*Ave. MHz below target*	*Ave. effect*
VZW	*16.20*	*$1.16*
Cingular	*24.42*	*$1.34*
Sprint	*7.69*	*$0.11*
ATT	*11.25*	*$0.06*
Voice	*24.38*	*$1.35*
Alltel	*24.95*	*-$0.22*

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Mexican 1.9 & 3.4 GHz Auction

Price of 10 MHz can exceed price of 30

Area	Pops (M)	1.9 GHz Band (PCS) 30 MHz AB Blocks	1.9 GHz Band (PCS) 10 MHz DE Blocks	3.4 GHz Band (WLL) 50 MHz A-E Blocks
Baja	2.6	$6.75	$6.04	$1.10
Region 2	4.4	$0.76	$0.37	$0.19
Region 3	5.0	$2.22	$1.53	$0.44
Monterrey	7.5	$8.76	$5.22	$0.81
Region 5	8.3	$0.12	$0.09	$0.17
Guadalajara	10.9	$2.87	$0.85	$0.80
Region 7	10.3	$0.77	$0.87	$0.31
Region 8	18.4	$0.12	$0.04	$0.07
Mex. City	23.7	$4.21	$2.21	$0.76
Total	91.1	$2.57	$1.50	$0.49

PCS and WLL Average Prices Per Pop ($ U.S.)

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